

Project: Improvement the quality of chemistry teaching in VET in Bosnia and Herzegovina (ChemTeach)



Co-funded by the
Erasmus+ Programme
of the European Union

Project No.: 101129417

Work pack: WP4 Chemistry games

Activity: T4.1 Summer school for students in Slovakia

Summer school for students in Slovakia

(Cosmetics chemistry, Food chemistry, Pharmaceutical chemistry)

Programme

26.-30.08.2024

Bratislava, Slovakia

Time	Activity
Day 1	Sunday, 25.08.2024
	Arrival to Bratislava
Day 2	Monday, 26.08.2024
8:00 – 8:05	Welcome, introduction of the meeting <u>Stredná odborná škola chemická, Vlčie hrdlo 50</u> Address: Vlčie hrdlo 50, 821 07 Bratislava Judita Dömötörövä
8:05 – 8:25	Agenda Judita Dömötörövä
8:25 – 8:50	Introduction of the teams <i>Moderated discussion about professional orientation and interests of participants</i> Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
8:50 – 10:30	Food chemistry <i>Activity 1: Determination of sucrose in soft drinks by spectrophotometry</i> <i>Activity 2: Determination of sodium chloride in salt brine (storing and aging cheese) by refractometry</i> <i>Activity 3: Determination of buffering capacity of soft drinks by potentiometric titration</i> <i>Activity 4: Determination of sulphur dioxide in wine by iodometry</i> Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
10:30 – 10:50	Coffee break
10:50 – 13:00	Food chemistry Continuing laboratory work Janka Memersheimerová, Martin Němeček
11:30 – 12:30	Exploring Chemical Information: A Collaborative Workshop for Teachers

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	Activity for teachers - Exchanging experiences Judita Dömötöröová
13:00 – 14:00	Lunch
14:00 – 15:00	Food chemistry Data processing Judita Dömötöröová, Janka Memersheimerová, Martin Němeček
17:00 – 18:00	Walk in the city centre Slovak students
Day 3	Tuesday, 27.08.2024
8:00 – 8:15	Instructions Judita Dömötöröová
8:15 – 10:30	Pharmaceutical chemistry <i>Activity 1: Determination of salicylic acid (impurity) in Aspirin by spectrophotometry</i> <i>Activity 2: Determination of boric acid in boracic water by potentiometric titration</i> <i>Activity 3: Determination of ibuprofen by neutralization titration</i> <i>Activity 4: Determination of ethanol in ethanol-water mixture by refractometry</i> Judita Dömötöröová, Janka Memersheimerová, Martin Němeček
10:30 – 10:50	Coffee break
10:50 – 13:00	Pharmaceutical chemistry Continuing laboratory work Janka Memersheimerová, Martin Němeček
11:30 – 12:30	Integrating ChatGPT in the Classroom: A Teacher's Guide to Enhanced Learning Activities Activity for teachers - Exchanging experiences Judita Dömötöröová
13:00 – 14:00	Lunch
14:00 – 15:00	Pharmaceutical chemistry Data processing Judita Dömötöröová, Janka Memersheimerová, Martin Němeček
Day 4	Wednesday, 28.08.2024

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Time	Activity
8:00 – 8:15	Instructions Judita Dömötörövä
8:15 – 10:30	Cosmetic chemistry <i>Activity 1: Synthesis of dibenzalacetone (ingredient in sunscreens)</i> <i>Activity 2: Synthesis of 2-ethoxynaphthalene (nerolin)</i> Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
10:30 – 10:50	Coffee break
10:50 – 13:00	Cosmetic chemistry Continuing laboratory work Janka Memersheimerová, Martin Němeček
11:30 – 12:30	Implementing Sensors in Chemistry Lessons: A Collaborative Workshop for Teachers Activity for teachers - Exchanging experiences Judita Dömötörövä
13:00 – 14:00	Lunch
14:00 – 15:00	Cosmetic chemistry Data processing Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
17:00 – 18:00	Cultural or sport activity Slovak students
Day 5	Thursday, 29.08.2024
8:00 – 8:15	Instructions Judita Dömötörövä
8:15 – 10:30	Cosmetic chemistry <i>Activity 3: Isolation of chamazulene from chamomilla by extraction. Determination of refractive index of chamazulene</i> Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
10:30 – 10:50	Coffee break
10:50 – 13:00	Cosmetic chemistry Continuing laboratory work Janka Memersheimerová, Martin Němeček
9:00 - 9:30	Dissemination activities

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Time	Activity
	Activity for teachers - Exchanging experiences Aleksandra Nježić
9:30 – 10:00	Integrating Erasmus Program Priorities in Projects: A Teacher Workshop for Sharing Experiences Judita Dömötörövä
10:50 – 12:00	Preparing the <i>Culture Quest</i> Activity for teachers Judita Dömötörövä
13:00 – 14:00	Lunch
14:00 – 15:00	Cosmetic chemistry Data processing Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
17:00 – 18:00	Cultural or sport activity Slovak students
Day 6	Friday, 30.08.2024
8:00 – 8:15	Instructions Judita Dömötörövä
8:15 – 10:30	Preparing final presentations Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
9:00 – 9:30	Exploring Opportunities for Erasmus Program Cooperation: Strategies for the 2024/2025 School Year Judita Dömötörövä
9:30 – 10:00	Summer School of chemistry 2025 in Bosnia and Herzegovina (Ideas) Activity for teachers Aleksandra Aćimović, Tatjana Dragić, Aleksandra Nježić
10:30 – 10:50	Coffee break
10:50 – 12:00	Presenting the results and sharing experiences Judita Dömötörövä, Janka Memersheimerová, Martin Němeček
12:00 – 13:00	Culture Quest. Sing & Dance Around the Europe Judita Dömötörövä, Janka Memersheimerová, Martin Němeček

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Time	Activity
13:00 – 14:00	Lunch
14:00 – 15:00	Final words, evaluation, certification Judita Dömötöröová
Day 7	Saturday 31.08.2024
	Departure of participants

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Grouping of students

Students will be divided into 4 teams. Each team will include one student from each school, except for the organizing school (SOŠCH), which will have 2 students in each team. Thus, each team will consist of 6 pupils. Students from the same team will be divided into two groups (A and B) and will participate in different activities.

Laboratory works

Team	Group A	Group B
	Food chemistry	
1, 2	Determination of sucrose in soft drinks by spectrophotometry	Determination of sodium chloride in salt brine (storing and aging cheese) by refractometry
3, 4	Determination of sulphur dioxide in wine by iodometry	Determination of buffering capacity of soft drinks by potentiometric titration
	Pharmaceutical chemistry	
1, 2	Determination of ibuprofen by neutralization titration	Determination of boric acid in boracic water by potentiometric titration
3, 4	Determination of salicylic acid (impurity) in Aspirin by spectrophotometry	Determination of ethanol in ethanol-water mixture by refractometry
	Cosmetic chemistry	
1 - 4	Synthesis of dibenzalacetone (ingredient in sunscreens)	Synthesis of 2-ethoxynaphthalene (nerolin)
1 - 4	Isolation of chamazulene from chamomilla by extraction. Determination of refractive index of chamazulene	Isolation of chamazulene from chamomilla by extraction. Determination of refractive index of chamazulene

Contacts

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