

Modified schedule for the General Chemistry laboratory practice

The practices will be organized for 4 sessions (6 hours/session) based on the modified schedule below.

As usual, at the beginning of the lab practices a **short test** will be written (25-30 mins).

Attendance is compulsory!

Group 1

Abdallah Ahmed Abdelgawwad Mohamed Soliman
Arif Arifuzzaman
Bayandy Dinmukhamet
Boldtumur Bayar
Dzay Hawal Hayder Ismael
Elhalaby Habib Richard Salim
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Kashkhuu Oyundari
Nhean Panha Vatthey
Nunez De La Rosa Ana Karen
Pham Tran Nguyet Ha
Phanka Douangphathida
Shahid Habib
Shams Hafiz Furqan
Stanynets Vladyslav
Tleugabyl Madina
Tran Dang Khoa
Tyulegenov Bekzat

Group 2

Abdullah Ahmed Muneer Ahmed
Aliyeva Zenfira
Ba_Amer Ahmed Abdullah Ahmed
Bader Jamil Ibrahim Jamil
Bintamam Mohammed Osamah Mohammed
Harsi Hamzah Khaled Ahmed
Issatayeva Inkar
Kaga Deborah Donald
Kaziyeva Aisha
Lapochkina Iuliia Andreevna
Lkhagvasuren Batbold
Makhsatova Saya

1. session (4th of September 2020, 10:00 – 16:00)

Practices are organized in the lab **E-214** for **Group 1**, in **E-111** for **Group 2**.

1. Decant, centrifuging, filtration (**Lab manual 5, 5.1, pages: 21-22, Supplement E1-E6**)

video link for centrifuging: https://www.youtube.com/watch?v=KEXWd3_fm94

video link for gravity filtration: <https://www.youtube.com/watch?v=QEex788j-yk>

video link for vacuum filtration: <https://www.youtube.com/watch?v=IrD8Iqf1CKU>

2. Preparation of a double salt (substance #1) (**Lab Manual 8, pages: 30-34, Supplement E1-E6**)

a) iron(III) ammonium sulphate (**Lab Manual 8.1**)

b) potassium aluminium sulphate (**Lab Manual 8.2**)

c) basic zinc carbonate (**Lab Manual 8.3**)

d) chromium(III) potassium sulphate (**Lab Manual 8.4**)

The solid compounds won't be prepared but **all students should calculate the theoretical yield and percent yield** based on the starting masses provided by the instructors (see the table „Substance 1” at the homepage: inorg.unideb.hu). We will check these results in the lab manuals.

- Preparation of a salt from its metal (substance #2) (**Lab Manual 12, pages: 49-53**)
 - lead(II) chloride (**Lab manual 12.1**)
 - iron(II) ammonium sulphate (**Lab Manual 12.2**)
 - aluminium(III) sulphate (**Lab Manual 12.3**)
 - magnesium sulphate (**Lab Manual 12.4**)
- Purification of a benzoic acid sample contaminated with sodium chloride (*in 4-membered groups*) (**Lab manual 5.2, page: 23**)
- Determination of the composition of a mixture of KClO_3 and KCl (**Lab Manual 7, pages: 27-29**)
- Dependence of reaction rate on the concentration of the reactants (*in 2-membered groups*) (**Lab Manual 15, Pages: 63-65**)

2. session (7th of September 2020, 10:00 – 16:00)

Practices are organized in the lab **E-214 for Group 1**, in **E-111 for Group 2**.

- Demonstration of a melting point determination
video in e-learning system: **Determination of Melting Point**
- Determination of the melting point of the purified benzoic acid (*in 2 memberedf groups*) **Lab Manual 6.1, pages: 25-26**
- Demonstration of an acid-base titration (**Supplement G1-4**)
video in e-learning system: **Titration**
- Concentration determination of the standard NaOH solution (**Lab Manual 9, 9.2, pages: 36-38**)
- Molecular weight determination of the purified benzoic acid based on acid-base titration (**Lab Manual 9.3, pages: 38-39**)
- Purified benzoic acid due in

3. session (9th of September, 2020, 10:00 – 16:00)

Short test will be written in the lab **E-214 for Group 1**, in **E-111 for Group 2**, while practices are organized in the laboratory E-214 for both groups.

- Laboratory work with gases: gas cylinders, other methods for gas generation (**Lab Manual 10, 10.1, 10.2, pages: 40-44, Supplement H1-2**)
videos in e-learning system: **Gas Cylinder**
Generation of Oxygen Gas

Kipp's Apparatus, Generation of Hydrogen Gas

2. Preparation of oxygen in a laboratory gas generator, burning of sulphur in oxygen (*this experiment will be carried out in 4-membered groups*) (**Lab Manual, 21.3, page: 44**)
3. Determination of molecular weight based on ideal gas law (*in 4-membered groups*) (**Lab Manual 11, pages: 46-48**)
4. Quantitative study of a precipitation reaction (*in 4-membered groups*) (**Lab Manual 14, pages: 59-62**)
5. Liquid-liquid extraction (**Supplement I1-2**)
video link for extraction: <https://www.youtube.com/watch?v=EFiFPoOzqtk>
6. Substance #2 due in

4. session (11th of September 2020, 10:00 – 16:00)

Short test will be written in the lab **E-214 for Group 1**, in **E-111 for Group 2**, while practices are organized in the laboratory E-214 for both groups.

1. Study of buffer solutions (**Lab Manual 16, pages: 66-69**) (*in 2-membered groups*)
 - a) acetic acid – sodium acetate buffer (**16.1**)
 - b) ammonia – ammonium chloride buffer (**16.2**)
2. Studies of reaction involving gas formation or precipitation (*in 2-membered groups*) (**Lab Manual 13, pages: 54-58**)
3. Hydrolysis of salts (**Lab Manual 17, pages: 70-72**)
4. Standard electrode potentials and chemical reactions (*in 2-membered groups*) (**Lab Manual 18, 18.1, pages: 73-76**)
5. Study of a Daniell cell (*in 4-membered groups*) (**demonstration, Lab Manual 18.2, pages: 77-78**)