Schema KZ4014 Oorganisk kemi, 9 hp

VT2020 (17.02.2020 – 20.03.2020)

dag vecka	måndag	tisdag	onsdag	torsdag	fredag
08 17/02-21/02	F1 Rö1	F2 Rö2	F3 Rö3	F4 Rö4	L1 L1
09 24/02-28/02	F5 Rö5	F6 Rö6	F7	L2 L2	F8
10 02/03-06/03	F9 Rö7	L3 L3	L3 L3	F10	F11
11 09/03-13/03	F12 Rö8	L4 L4	L4 L4	F13	F14
12 16/03-20/03	F15	F16 Rö9	Reservlabb L1,2	Frågestund	Tenta

Tider: fm 9:15 – 12; em 13 – 16 för Rö och 13-17 för L
F (1-16) föreläsningar, R (1-9) räkneövningar, L (1-4) labbar
F och R: Ulrich Häussermann (ulrich.haussermann@mmk.su.se)
L: Alisa Gordeeva (alisa.gordeeva@mmk.su.se)

Lokaler: F och RÖ i K233. L K434-K422!
Notera att det är inte möjligt att erbjuda reservlabb för L3, L4 och L5. Missar man de labbarna får man göra om ett år senare.

Kurslitteratur:
"Inorganic Chemistry" 7th edition (by Mark Weller, Tina Overton, Jonathan Rourke, Fraser Armstrong) ISBN: 978-0-19-876812-8

Föreläsningar

F1-2: Introduction (chapters 1-3, 8)

F1-2: Repetition of concepts and methods, physical techniques in inorganic chemistry.

F3 – F4: acid-base chemistry (chapter 5)

F3: Arrhenius and Bronsted-Lowry concepts. Non-aqueous and non-protic solvents. Oxoacids and polyoxo compound formation (pp 150-163, pp174 - 181)

F4: Lewis concept, Lewis acid-base reactions (pp164-174)

F5 – F6: Redox chemistry (chapter 6)

F5: Reduction potentials and redox stability (pp 185 – 198)

F6: Application of redox stability, stability diagrams (pp 199-211)

F7 – F9: Main group chemistry

F7: Periodic trends and principles of main group chemistry (chapter 9).

F8: Group 1,2, and 13 elements (essentials from chapters 10 to 13)

F9: Group 14 and 15 elements (essentials from chapters 14 and 15) and group 16-18 elements (excerpts from chapters 16 to 18)

F10 – F13: Transition metal chemistry

F10: Introduction to coordination compounds (chapter 7) and d-block elements (chapter 19).

F11: d metal complexes: electronic and molecular structure, properties (chapter 20, pp 515 – 530)

F12: d metal complexes: electronic and molecular structure, properties (contd.)

F13: d metal chemistry: organo metallic chemistry, reactions (a little from chapters 21 and 22)

F14 – F16: Clusters and solids

F14: Clusters, description of solids, structures of solids (chapter 4)

F15: Classification of solids (metals, alloys, semiconductors, insulators), bonding in solids (chapter 4 contd).

F16: Materials chemistry (excerpts from chapter 24)

Räkneövningar

RÖ1: Properties of atomic orbitals, construction of MOs, VSEPR, symmetry

RÖ2: Properties of atomic orbitals, construction of MOs, VSEPR, symmetry

RÖ3: Acid-base

RÖ4: Acid-base

RÖ5: Redox

RÖ6: Redox

RÖ7: Main group chemistry

RÖ8: Transition metal chemistry

RÖ9: Solids

Laborationer

1. Acid base chemistry (metal ions in aqueous solution, hydroxide, oxides, HSAB principles).

2. Redox chemistry (Ag-NH_3 complexes and stability constants).

3. Synthesis and characterization of a hypervalent IBr_2^- species.

4. Ammonia complexes of Co(III) and thermochromic materials.