



Syllabus

Term: 2023/24/1 **Subject name:** Mineralogy **Subject code:** ENKEMNA1301

Unit (Unit code) (KEMIA)

Lecturer responsible for the course: Dr. JÁGER Viktor

Requirement: Exam

Classes per week : 2/0/0

Classes per term: 0/0/0

Purpose of education:

Aims: Understanding the structure and the chemical and physical properties of crystalline state and amorphous phase materials. Understanding crystal symmetry, crystal morphology, crystal growth and properties of minerals. Classifications and the occurrence of mineral species.

Knowledge: On successful completions of this course students are expected to be able to distinguish mineral species, recognize rock forming primary and secondary minerals. They also will have the knowledge to observe symmetry in nature and the ability to identify mineral species macroscopically both in field and in laboratory too.

Contents:

Week 1 Introduction, the concept of ordering, mineral, crystal, amorphous state. Basics of the classification of minerals.

Week 2 Structural crystallography, geometrical crystallography and symmetry, crystal morphology, Bravais-lattices, translation, crystal morphology, crystal systems, Miller-indices.

Week 3 Polymorphism, isomorphism, substitutions, lattice defects, intergrown, pseudomorphism

Week 4 chemical and physical properties of minerals. Specific gravity, cleavage, fracture, streak, hardness, color, luster, chemical formula, crystal system, occurrence (paragenesis), crystal habit.

Week 5 Growth of minerals, paragenesis, solubility: dissolution-precipitation, silicate-melt and crystallization, solid-state alterations, phase-diagrams

Week 6 Fluid inclusion microtermometry. Modelling of mineral formations



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Contents:

Week 7 Classification of minerals: native element minerals, sulphide minerals

Week 8 Halogenides, Oxides-hydroxides, carbonates, nitrates

Week 9. Borates, sulphates

Week 10 Phosphates, arsenates, vanadates

Week 11 Nesosilicates, sorosilicates, cyclosilicates

Week 12 Inosilicates, phyllosilicates

Week 13 Tectosilicates, organic minerals

System of examing and valuation:

Evaluation is based on the final written exam.

55%=2

65%=3

75%=4

85%=5

Bibliography:

1. PPT presentation of the lesson



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Bibliography:

2. Klein, C - Dutrow, B. (2008). Manual of Mineral Science. ISBN13: 978-0-471-77277-4