

Course Unit : Processing routes for layer silicates and associate minerals (42 h – 4.5 ECTS –elective)

Content

Particle mechanics

Size definition, mass – size distribution, specific surface area, Size reduction, classification, solids water separation

Mineral separation processes

Mass balance, metallurgical balance, evaluation.

Unit processes: optical separation, selective grinding, gravity separation , magnetic, electrostatic separation.

Froth Flotation of minerals

Behavior of minerals in water, Surface active reagents, Solid-air, solid-water, water-air interfaces. Collectors, activation and depression mechanisms

Learning

Theoretical knowledge in the concepts of mineral processing unit operations.

Application of theoretical knowledge in solving practical problems of minerals processing plants.

Practical skills in applying experimental procedures to design mineral processes.

Horary

Lectures : 16 h

Tutorials : 8 h

Practical laboratory work : 18 h

Evaluation

* Final examination : 60% of the mark. (written 50%, oral 10%)

* Evaluation during the teaching period : 40 % of the mark (tutorials 20%, laboratory projects 20%).

Teaching Staff

Elias STAMBOLIADIS (TUC, Chania)

Olga Pantelaki (TUC Chania)

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