COURSE TITLE:

ENVIRONMENTAL ANALYTICAL TECHNIQUES 1.

COURSE DESCRIPTION:

Mineral phases (solid crystalline compounds) participating or forming in environmental processes – their properties and environmental role. Information types about and characterisation of solid phases (natural or manmade): geometry, texture, chemical composition (major, minor and trace element content, isotopic composition), crystal structural information and the analytical techniques by which one can collect these data. In the first part, attention is focussed on the basic properties of solids (shape, texture, density, cleavage etc.) and from the applicable analytical methods, differential thermal analysis, X-ray powder diffraction and Raman spectroscopy are introduced.

LITERATURE:

Földvári, M. (2011): Handbook of thermogravimetric system of minerals and its use in geological practice. Occasional paper of the Geological Institute of Hungary, Vol. 213. Geological Institute of Hungary, Budapest, 178 pp. ISBN 978-963-671-288-4.

Papp, G., Weiszburg, T.G. (ser. ed. 2000): EMU Notes in Mineralogy, Vol. 2: D.J. Vaughan, R.A. Wogelius (ed.): Environmental Mineralogy. Eötvös Univ. Press, Budapest, pp. 1–434.

Papp, G., Weiszburg, T. G. (ser. ed. 2004): EMU Notes in Mineralogy, Vol. 6: Beran, A., Libowitzky, E. (ed.): Spectroscopic methods in mineralogy. Eötvös Univ. Press, Budapest, pp. 1–661.

J. Dubessy, M.-C. Caumon and F. Rull (editors, 2012): EMU Notes in Mineralogy, Vol. 12: Raman spectroscopy applied to Earth Sciences and Cultural Heritage. pp. 1-504.

R. Jenkins, R. Snyder (1996): Introduction to X-Ray Powder Diffractometry. 432 pp. ISBN: 978-0-471-51339-1

TEACHER:

Tamás G. Weiszburg

associate professor