Information sheet for the course
Systems of quality management

University: *Alexander Dubček University of Trenčín*	
Faculty: *VILA – Joint Glass Centre*	
Course unit code: *SyRK*	**Course unit title:** *Systems of quality management*
Type of course unit: *compulsory*	
Planned types, learning activities and teaching methods: *Lecture: 3 hours weekly; face to face*	
Number of credits: *4*	
Recommended semester: *3. semester*	
Degree of study: *II. (engineer, magister)*	
Course prerequisites: *none*	
Assesment methods: *Oral exam*	
Learning outcomes of the course unit: *Student has knowledge of quality management system and its assessment in chemical laboratory. Students know about conditions of metrological securing and ways of assessment of laboratory and department competences. Students know ways of sampling, choosing of analytical method and evaluating of accuracy and precision of measurement. Student can prepare a protocol and its requisites according to ISO/IEC 17025 and ISO 9000. Students know the systems of quality assessment and international accreditations bodies.*	
Course contents: 1. *Introduction to quality management system, meaning for experimental work, reasons and effects resulting from it. Metrological securing of measurements, basic terms.* 2. *Ways of assessment of laboratory and department competences.* 3. *Sampling and evaluation of sample quality. Plans of sampling. Types of samples.* 4. *Choosing of analytical method, requisites of standard working method, LC LQ, accuracy, precision, linearity, yield, repeatability, reproducibility, interferences, price, safety.* 5. *Operative criterion of working method. Sources of incorrect results, verification, calibration, validation of method.* 6. *Choosing of experimental technique, surroundings requirements, mensural containers and chemicals. Measurements, etalons, calibration, securing of traceability, specifying of nominal value of analyte.* 7. *Preparation of protocol and its requisites. Monitoring of measurement process, regulation diagrams.* 8. *Term of uncertainity, reasons for its establishment, systematical approach to uncertainity estimation, specification, identification, combination. Interpretation of results.*	

9. *Quality systems in chemical laboratory, ISO/IEC 17025, ISO 9000, contents of quality systems.*
10. *Handbook of quality. Internal and external quality audits.*
11. *Evaluation of quality systems.*
12. *Certification and accreditation.*
13. *National and international accreditation bodies.*

Recommended of required reading:

Elizabeth Prichard and all.: Quality in th Analytical Chemistry Laboratory, John Wiley and Sons, Chichester-N.Y. – Brisbane – Toronto – Singapore, 1995.
Quantifiing uncertainity in chemical measurements, EURACHEM Quide, second edition, 2011.
Method Validation, EURACHEM Quide 2002.

Language: *Slovak*

Remarks:

Evaluation history:

A	B	C	D	E	FX

Lectures: *prof. Ing. Ján Garaj, DrSc.*

Last modification: *31. 1. 2014*

Supervisor: *prof. Ing. Marek Liška, DrSc.*