Course title: FUNDAMENTALS OF STATISTICAL QUALITY CONTROL

ECTS credit allocation (and other scores): 2

Semester: autumn

Level of study: : ISCED-7 - second-cycle program EQF-7

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 15h lectures / 15h classes

Course coordinator/ Department and e-mail: dr Adriana Łobacz / Department of Dairy Science and Quality Management, adriana.lobacz@uwm.edu.pl

Type of classes: classes and lectures

SUBSTANTIVE CONTENT

CLASSES: Methods for assessing variability. Control card design. Study Case study - analysis of numerical assessment cards X-R, X-Me, X-s, X-mR, analysis of cards for alternative evaluation p, np, c, u. Evaluation of the capacity qualitative processes. Sampling procedures according to the alternative assessment.

LECTURES: Introduction to statistical process control methods. Basic definitions, causes, types and measures of process variability. Construction and types of control charts, principles of application. Control cards for numerical variables X-R, X-Me, X-s, X-mR, mA-mR and alternative variables p, np, c, u. Indicators of process variability. alternative variables p, np, c, u. Indicators for assessing process capability. Classical SSP tools. Statistical quality control - characteristics and parameters of alternative method test plans, OC curve.

Learning purpose: To impart knowledge of the theoretical basis for implementing methods of statistical quality control and statistical process control. To acquire the ability to analyse the stability of processes and assess their quality capability. To develop the ability to visualise data process data, their proper interpretation and design application of particular tools..

ON COMPLETION OF THE STUDY PROGRAMME THE GRADUATE WILL GAIN:

Knowledge: student explains the theoretical basis of statistical quality control and statistical process control; knows the principles of using test plans, SSP tools; knows the principles of application of tools for assessing the stability and capability of processes.

Skills: student is able to analyse qualitative data, distinguishes components of variability processes; can select appropriate tools and apply them; can interpret, evaluate, solve and visualise problems related to the application of SPC tools; designs, formats and uses a spreadsheet.

Social Competencies: student can correctly identify and resolve situations requiring intervene in the company's control system. Correctly expresses judgements and is able to justify them.

Basic literature:

1. Peihua Qiu, Introduction to Statistical Process Control; CRC Press Taylor & Francis Group, 2014

The allocated number of ECTS points consists of: 32 contact hours with an academic teacher: Student's independent work: 5