Subject	Mathematics
Title	Mathematics – data analysis
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Description of the unit	Basic knowledge about practical investigation organization, skills data analysis conducting and results in different economic sectors, with usage of MS Excel and R studio program.
Contents	Aims of this study course – to give basic and practical skills about statistical investigations, how to conduct these ones and to receive knowledge about basic analysis of data as well. This course is suitable to use in all organizations and economical fields.
Learning Outcomes / Skills	Students understand stages of investigation conducting, collecting of data and about principles of questionnaire preparation. Students can effectively analyze collected data while receiving the results needed. After completing of this course, a student: 1. Knows necessary requirements for conducting a questionnaire and can prepare a questionnaire that is suitable for investigation aims. 2. Knows at basic level methods for proper statistical analysis (description and result statistics). 3. Finds different kinds of data and can connect these ones in accordance with suitable statistical methods of data analysis. 4. Can fulfill correct statistical analysis with these existing data. 5. Can with knowledge and skills collect data that needs for data analysis. 6. Can explain ja does conclude about the results that received during the analysis.
Target students/class	High school (15 – 18 age)

Prerequisites	Basic knowledge of math, Excel.
Time expected	It will be new study course of 35 hours
Interdisciplinary links	IT, Excel, statistics, probability theory
Methodology	Proper study materials (theoretical and practical parts, tests). Study theoretical and practical lessons, class and homework according to teaching materials. Evaluation: Tests, practical evaluation work. Minimal requirements for the Credit work. The student knows basic definitions and can differentiate between these ones. He has skills to use basic methods of graphic analysis and calculation formulas to solve tasks, he can choose and use statistical methods for analysis of specific data and in addition to interpret and do conclusions of the received results.
Human Resources (internal and/or external)	Internal resources: Anna Kondratenko, math teacher External resources: Experts in this field of educator (Tallinn Technology University).
Resources	Access to modern education in the practical math field. Study course and materials of Tallinn Technology University.
Lesson Plan	Theory, practice, tasks according to the course study materials. For control of knowledge – tests and credit work.

21st Century Skills	- Critical thinking - Communication skills - Creativity - Problem solving - Perseverance - Collaboration - Information literacy - Technology skills and digital literacy - Media literacy - Global awareness - Self-direction - Social skills - Literacy skills - Civic literacy - Social responsibility - Innovation skills - Thinking skills Examples, how to check competences: Critical thinking: they will analyze the data collected during the experiments made by Creativity: they will write essays about the consequences of climate change … Collaboration: they will collaborate between groups at the lesson and in each group to receive results and discuss these ones according to the group work. Communication: They will communicate in the conceptualization phase of each Information literacy: the students can search information from multiple source of information. Media literacy and technology literacy: They will create Presentations with usage of different apps and online tools.

Assessment	Summative assessment:
	Formative assessment:
Remarks	