

Course description (topics)

Title of the course: Understanding Quantitative Data				
Tutors of the course , contact details: Agoston Nagy, stc@binaura.net , +36304809295				
Code: M-KF-E-301- DI-202301-01 M-KF-301-DI- 202301-01	Related curriculum (programme/level): Research & Innovation IxD MA	Recommended semester within the curriculum: 2023/24/1	Credit: 5	Number of class hours: 44 Student working hours: 109
Related codes	Type: (seminar/lecture/class work/consultation, etc.) Class Work, seminar	Can it be an elective course? No	In case of elective what are the specific prerequisites: -	
Course connections (prerequisites, parallels): -				
Aim and principles of the course: The aim of the course is to provide critical understanding of quantitative data. Students will investigate economical and cultural environments through hybrid theoretical and hands-on methodologies based on data processing, analysis, coding and different representation methods (taxonomies, visualizations, cartographies, sonifications).				
Learning outcomes (professional and general competences to be developed): Knowledge: Critical understanding of quantitative data with a systems thinking approach Ability: Planning interactive systems according to measurable data & feedback mechanisms Attitude: Independent analysis, with a focus on aesthetic qualities and visual clearance				
Topics and themes to be covered in the course: - basics: data types, origins, dimensions, systems - tools: frameworks, languages, workflow - acquire data: measuring, scraping, collecting, automating - parsing pre-recorded data & datasets - processing realtime data - sensing, filtering - discussions, consultation, examining individual, specific interests - analysis: patterns, correlations, machine learning - representations: visualization, sonification techniques & best practices - predictions, building insights - discussion, class work presentation				
Course structure, nature of the individual sessions and their timing (in case of several teachers' involvement, please indicate the distribution of their teaching input:				

In most classes, the course events will be structured as the following:

0. recap
1. theoretical introduction to the actual topic
2. Q/A
3. hands-on session (workshop setup, group work using modern web technologies)
4. wrap-up

Students will share their impressions, insights and giving feedback to each other

Students' tasks and responsibilities:

presence and active participation in offline discussion and online channels

Learning environment: classroom & online

Assessment:

active participation on the classes

aesthetic qualities of the practical work

Requirements to be met:

presentation (visual introduction of the class work)

Method of assessment:

practical demonstration

Recommended Literature:

Paul Klee (1961): The Thinking Eye, Lund Humphries, 1961

Joshua Noble: Programming Interactivity, O'Reilly, 2009

John Maeda: How to Speak Machine, Penguin Publishing Group, 2019

Thomas Hermann et al: The Sonification Handbook, Logos Verlag Berlin, 2011

Ben Fry: Visualizing Data, O'Reilly, 2008

Manuel Lima: Visual Complexity, Princeton Architectural Press, 2011

Manuel Lima: Book of Trees, Princeton Architectural Press, 2014

Patrick Hebron: Machine Learning for Designers, O'Reilly, 2016

Other information: **The course begins 11 September!**

On Fridays, between 11.30am and 2.20pm in room

Recognition of knowledge acquired elsewhere/previously/validation principle:

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Out-of-class consultation times and location

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