

## Research – Development – Innovation Syllabus

1. General Informations	Course title: <b>Data Manifestos: Designing Data Physicalistions in the Wild</b>				
	Course coordinator(s) / lecturer(s): Contact details: Mary Karyda: <a href="mailto:karyda@mome.hu">karyda@mome.hu</a> Damla Cay: <a href="mailto:damla.cay@mome.hu">damla.cay@mome.hu</a> Mihály Minkò: <a href="mailto:minko.mihaly@mome.hu">minko.mihaly@mome.hu</a> Kitti Butter: <a href="mailto:butter.kitti@mome.hu">butter.kitti@mome.hu</a>				
	Level and Code: B-KF-401-IK- 232402-03	Position in the Curriculum:	Recommended semester:	Credits: 5	Teaching hours: 48 Student workload: 102
	Related codes: M-KF-301-IK- 232402-03 M-KF-E-101-IK- 232402-03 ER-MOME-BA- IK-232402-02	Type: combined – lectures & design studio	Is it open to sign-up as an elective?	Specific pre-conditions to sign-up as an elective:	
Interlinkages / prerequisites, parallel units: none					
2. Targeting	<p><b>Aims and principles of the course:</b></p> <p>This course provides students with an opportunity to explore the domain of data physicalisation, with a particular focus on its application in outdoor settings. The aim is to efficiently communicate impactful and insightful messages to the wider population regarding the Green and Blue Infrastructures of Budapest. To accomplish this, the course will use contextual information and real-world data supplied by the city of Budapest and the organisation Másfél Fok.</p> <p>The programme consisting of lectures and practical seminars will be designed to facilitate hands-on learning for the students. The course will explore the methodology of data storytelling, instructing students on the process of converting intricate datasets into visually captivating narratives that are simple to understand.</p> <p>The groups will be motivated to generate ideas, create designs, and implement prototypes that not only depict the data but also appeal to a wide range of individuals. Students will benefit from insightful critical feedback, lectures facilitated by the Data Storytelling hub in the fields of data visualisation, data physicalisation, evaluation studies and design methods with a focus on participatory design. Furthermore, the course will examine the ethical implications associated with the public exhibition of data, guaranteeing is inclusive, respectful, and free from any misrepresentation of the data.</p> <p>Students will have gained a thorough understanding of data physicalisation principles and practises by the end of the course but also will gain first-hand experience in physical prototyping and user testing. With these abilities, they will be capable of developing meaningful and influential installations that not only educate but also motivate individuals to act.</p>				

	<p><b>Intended learning outcomes / professional and transitive competencies:</b></p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>- A General Understanding of Data Physicalisation: Develop an in-depth understanding of the fundamental principles and methodologies underlying data physicalisation, with a particular emphasis on external environments.</li> <li>- Gain expertise in the interpretation and translation of environmental or other data.</li> <li>- Acquire an extensive knowledge of diverse materials and design methodologies that are appropriate for outdoor data displays, taking into account aspects such as environmental impact, sustainability, and durability.</li> </ul> <p><b>Skills:</b></p> <ul style="list-style-type: none"> <li>- Data Visualisation and Storytelling: Develop experience in data visualisation and storytelling to effectively convert data in visual narratives.</li> <li>- Physical Prototyping: Develop skill in the design and construction of physical prototypes that focus on the user.</li> <li>- Collaboration: Develop proficiency in cross disciplinary collaboration and teamwork which are critical skill for the successful development of data phys in the wild.</li> <li>- Critical Evaluation: Develop capacity to analyse data critically, discern crucial messages and resolve challenges associated with data representation that are design related.</li> </ul> <p><b>Attitudes/attributes:</b></p> <ul style="list-style-type: none"> <li>- Ethical Consideration</li> <li>- Environmental Awareness</li> <li>- Creativity</li> </ul> <p><b>Autonomy and Responsibility:</b></p> <ul style="list-style-type: none"> <li>- Independent project work</li> <li>- Responsible data handling</li> <li>- Community engagement and impact</li> </ul>																															
<b>3. Itinerary</b>	<p><b>Course content (topics and themes):</b> Participatory data physicalisation, data visualisation, data storytelling, evaluation methods for data physicalisation and design methods</p>																															
	<p><b>RDI methods and tools used in the course:</b> Data visualisation tools, Evaluation frameworks and Rapid Prototyping techniques</p>																															
	<p><b>Schedule:</b></p>																															
	<table border="1"> <thead> <tr> <th>Week</th> <th>Date</th> <th>Lecture</th> <th>Student Work</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>Introduction; Presentation of the case; Q &amp; A</td> <td>Group Forming &amp; Setting up Miro board</td> </tr> <tr> <td>2</td> <td></td> <td>Intro to Data Storytelling</td> <td>Framed Ideation &amp; Decide on aspects of the topic</td> </tr> <tr> <td>3</td> <td></td> <td>Intro to Data Vis &amp; Cases</td> <td>Ideation through the data</td> </tr> <tr> <td>4</td> <td></td> <td>Moving from Vis to Phys &amp; Introduction to Data Phys Taxonomy</td> <td>Ideation through Rapid Prototyping</td> </tr> <tr> <td>5</td> <td></td> <td colspan="2">INTERIM OUTCOME: Mid-term presentation of concept</td> </tr> <tr> <td>6</td> <td></td> <td>Participatory Design &amp; User Testing</td> <td>Prototyping</td> </tr> <tr> <td>7</td> <td></td> <td style="text-align: center;">-</td> <td>Prototyping</td> </tr> </tbody> </table>	Week	Date	Lecture	Student Work	1		Introduction; Presentation of the case; Q & A	Group Forming & Setting up Miro board	2		Intro to Data Storytelling	Framed Ideation & Decide on aspects of the topic	3		Intro to Data Vis & Cases	Ideation through the data	4		Moving from Vis to Phys & Introduction to Data Phys Taxonomy	Ideation through Rapid Prototyping	5		INTERIM OUTCOME: Mid-term presentation of concept		6		Participatory Design & User Testing	Prototyping	7		-
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	8		-	Prototyping
	9		-	Deployment of prototype & Testing & Video Recording
	10		FINAL PRESENTATION: 15 minutes presentation with video	
<p>Learning environment: Classroom and outdoor locations</p>				
4. Evaluation	<p><b>Assessment:</b> Proactive work, efficient teamwork and ability to showcase learnings</p> <p><b>Assignments:</b> A finished participatory data physicalisation prototype per group and evaluation of the prototype</p> <p><b>Assessment method:</b> Based on class attendance, interim outcome presentation, group work and final prototype</p> <p><b>Assessment criteria:</b> Being able to reflect on why the students have taken certain design decisions and on the criticality of their learning</p>			
	<p><b>Calculation of grade:</b> (weights of the achievements, assignments; ranges of rates or points)</p> <p>Interim outcome (Mid-term presentation): 15% Group Work: 70% Final Presentation: 15%</p>			
	<p>Prior learning recognition (based on application): -</p>			
	<p><b>Recommended readings:</b></p> <p>Çay, D., Nagel, T., &amp; Yantaç, A. E. (2019). What is happening in the city? a case study for user-centred geovisualisation design. <i>Journal of Location Based Services</i>, 13(4), 270-292.</p> <p>Cole, N.K.: Storytelling with data. Let's practice. Wiley 2019</p> <p>Dragicevic, P., Jansen, Y., &amp; Vande Moere, A. (2020). Data physicalization. <i>Handbook of Human Computer Interaction</i>, 1-51.</p> <p>Huron, S., Carpendale, S., Thudt, A., Tang, A., &amp; Mauerer, M. (2014, June). Constructive visualization. In <i>Proceedings of the 2014 conference on Designing interactive systems</i> (pp. 433-442).</p> <p>Karyda, M., Wilde, D., &amp; Kjærsgaard, M. G. (2020). Narrative physicalization: Supporting interactive engagement with personal data. <i>IEEE Computer Graphics and Applications</i>, 41(1), 74-86.</p> <p>Sanders, E. B. N., &amp; Stappers, P. J. (2008). Co-creation and the new landscapes of design. <i>Co-design</i>, 4(1), 5-18.</p> <p>Wright, P., &amp; McCarthy, J. (2022). <i>Experience-centered design: designers, users, and communities in dialogue</i>. Springer Nature.</p>			

	Additional information:
	Schedule and venue for personal consultation: Classroom