Name	# TouchDesigner fundamentals bridging hardware and visuals: real-time data flow, sensor input, and interactive sound
Codes	M-SZ-E-301-FS-252602-15 / M-SZ-301-FS-252602-15
Host	Future School
Location	B-106

Course info			**Subject info**			
Course Type	Contact hours	Home study hours	Comprehensive Subject	Subject type	Semester	Subject credit value
Practice	36+4	102	Elective	R&D, Elective	2026 / 01	5

Recommendation
This course is intended to students who would like to gain a practical foundation in TouchDesigner for real-time visual creation and data manipulation. You will learn to navigate the operator network, visualize complex data tables, and master core procedural design techniques. There will be also focus on bridging the digital and physical realms by learning how to connect and utilize microcontrollers within the TouchDesigner environment.

Short description
The course offers a comprehensive introduction to the TouchDesigner environment, aiming to equip participants with the confidence to build interactive and generative visual projects. We will proceed step-by-step through the software's core concepts, network thinking, and the functionality of key operators (CHOPs, TOPs, DATs). Students will gain skills in efficiently loading and visualizing various forms of data, such as tables and lists. Critically, the curriculum emphasizes physical interaction: we will dedicate time to practical examples of connecting microcontrollers to TouchDesigner, enabling the use of real-time input data for visual feedback and interactive installations. The course concludes with hands-on exercises and a project assignment to ensure the immediate applicability of the acquired knowledge.

Teachers			
Name	Contact information	Short BIO	Open hours
Gergő Gábor Péri	peri.gergo@gmail.com	Media designer,interactive installations.	1 hours a week, by appointment

Course scheduling			
Course format		Weekly class appointments	
Group and individual consultations according to a pre-announced schedule, guest lectures and workshops		Thursday 16:40	
Details of each session's type and schedule, showing the teacher's role			
Weeks	Date	Weekly educational content	Studio/workshop
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		• (Week 1) TD Introduction: Interface, network principles, and procedural philosophy. • (Week 2) Visual Operators (TOPs): Image/video rendering and manipulation. • (Week 3) Data Operators (DATs): Data tables, structuring, and basic Python scripting. • (Week 4) Control Operators (CHOPs): Data streams, animation, and signal processing. • (Week 5) Physical Input I: Microcontroller connection (Serial/OSC setup). • (Week 6) Physical Input II: Data visualization and individual project initiation. • (Week 7) Interactive Systems: Building UIs, control panels, and feedback loops. • (Week 9) Project Development I: Research, prototyping, and technical assistance. • (Week 10) Project Development II: Debugging, refinement, and progress checks. • (Week 11) Final Presentation: Project showcase, documentation, and review.	

Course completion requirements, prerequisites, and evaluation				
Students' duties				
Requirements, assignments	Form of evaluation	Evaluation criteria	Deadline	% in evaluation
10 mins Presentation & Pitching	Presentation (visual introduction of the class work)	Active participation on the classes aesthetic qualities of the practical work	10th, 12th Week	60%

Video documentation (1.5 mins)	Submitted through Teams Forms	Clarity, consistency	12th Week	40%
General requirements				

Course materials and literature
Mandatory literature
Derivative ● *TouchDesigner Official Wiki Documentation* ● *Note: Essential reference for every operator and core concept. This is the TD "textbook."* *Elburz Sorkhabi* ● *An Introduction to TouchDesigner* ● *Note: Free, open-source introductory book covering TD fundamentals. (Downloadable)* *TouchDesigner OP Snippets* ● *OP Snippets (Accessible within the software)* ● *Note: Quick, built-in examples demonstrating the function of individual operators.*
Course notes and presentations
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Recommended literature
Bileam Tschepe (elekktronaut) ● https://www.youtube.com/@elekktronaut The Interactive & Immersive HQ ● https://www.youtube.com/@TheInteractiveImmersiveHQ Matthew Ragan ● https://www.youtube.com/@raganmd Polyhop ● https://www.youtube.com/@Polyhop

Learning outcomes	
Knowledge	Critical understanding of temporal processes and media visualization techniques, with a systems thinking approach
Skills	Planning and deploying prototypes according to measurable data & feedback mechanisms
Attitude	Independent analysis, with a focus on aesthetic qualities and visual clearance
Autonomy and Responsibility	Independent decision making in the professional field

Exemption
No exemption may be granted from participation in or completion of the course.

Curricular connections		
Unit	Parallel courses	Course proportion in unit
Course prerequisites	Special subject prerequisites	Is it available as an elective?
		Yes

Guidelines and rules for the use of artificial intelligence in the course
The use of artificial intelligence at the university is subject to the Artificial Intelligence and Plagiarism Regulations of the Moholy-Nagy University of Art and Design.

Materials needed for the course	Who provides the materials?
Equipment or material requirement 1	Tech Park / Programme / Student / Other
Equipment or material requirement 2	

Other information, comments