

Sound Studies and Sonic Arts

Winter Term 2026/27

Phase Focus

Module Practice

Course Title [AV] Immersive Audio x Immersive Environments II | Workshop

Course Times and Location Nov 9- 12, 2026 and Jan 15, 2027 | 10 a.m. – 4 p.m. | LIE 318 and Weser Studio 183

Instructor [Prof. Daisuke Ishida](#), [Martin Sulzer](#)

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Office Hours and Location upon request, before or after the seminar

Possible Credit Points Practice 2CP (NG), Free Focus 2CP (NG)

Course Description

This intensive hands-on Interdisciplinary workshop constitutes the consecutive Project Phase of the **[AV] Cluster 2026**. Building strictly upon the spatial audio and full-dome visual foundations established during the Summer Term 2026 seminars (Immersive Audio and Immersive Environments), this workshop acts as a specialized production lab. It provides direct, individual guidance and technical training to prepare students' artistic works for public exhibition.

In close collaboration with the Zeiss-Großplanetarium Berlin and SoundS Udk Berlin, students are tasked with authoring and refining site-specific, immersive audiovisual fixed-media works tailored for a 23-meter projection dome and a multichannel spatial sound system. The session structures are designed to bridge high-resolution visual rendering with advanced 3D spatialization techniques, leading to the public showcase **Portale 2027**.

Requirements for attending

Students must have taken **[AV] Immersive Audio** and **[AV] Immersive Environments** seminars in the summer semester 2026 and currently taking part in the Planetarium project.

Technical Ecosystem & Required Tools

Students must have their laptops pre-configured with the software suite from the preparatory summer seminars, supplemented by advanced spatialization libraries:

- **Spatial Audio Production:** Reaper, the IEM Plug-in Suite, ICST Plug-in Suite and SPARTA Ambisonic Plug-in Suite for High-Order Ambisonics (HOA) encoding and mixing.
- **Object-Based Spatialization:** Max MSP and IRCAM Spat for real-time spatial manipulation and trajectory mapping.
- **Advanced Distance Spatialization:** ICST Ambisonics Plugins (specifically the icst encoder) to model physical distance attenuation, air absorption, and Doppler shift parameters.
- **Generative & Real-time Visuals:** TouchDesigner, focusing on full-dome texture rendering, dome warping, and the CHOPs Recorder for baking interactive parameter signals.
- **3D Environment & Engine Rendering:** Epic Games Launcher and Unreal Engine for real-time virtual environments and high-fidelity rendering.

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Schedule

Date & Location	Focus & Software
09.11.2026 10 a.m. – 4 p.m. LIE 318	Midterm Presentation & Peer Review <i>Ambisonics & Full-Dome Visuals</i>
10.11.2026 10 a.m. – 4 p.m. Weser Studio 183	Visual Rendering & Signal Baking <i>TouchDesigner & Unreal Engine</i>
11.11.2026 10 a.m. – 4 p.m. Weser Studio 183	Advanced Spatialization & Mastering <i>Reaper, IEM & ICST</i>
12.11.2026 10 a.m. – 4 p.m. Weser Studio 183	Individual Consultations <i>Custom Debugging</i>
15.01.2027 10 a.m. – 4 p.m. LIE 318	Planetarium Works & Systems Ingestion <i>Final Playout Prep</i>

Exam/Credit Points

2 Credit Points (Not Graded: Practice, Free Focus): Regular attendance across all sessions, active contribution in peer reviews, and completion of intermediate project drafts.

Supporting Media

Toole, Floyd E. *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms*. Third edition. New York ; London: Routledge, 2017.

Rumsey, Francis. *Spatial Audio. Music Technology Series*. Oxford ; Boston: Focal Press, 2001.

Roginska, Agnieszka, ed. *Immersive Sound: The Art and Science of Binaural and Multi-Channel Audio*. New York; London: Routledge, 2017.

Kwastek, Katja. *Aesthetics of Interaction in Digital Art*. The MIT Press, 2013.

Game Engine Free Verse. *Artist Diary: Technical & creative workflows in modern real-time visual creation*. https://odraplatform.com/game-engine-free-verse_artist_diary

Busch, Benjamin. *Scanning the Horizon: An Immersive Archive*, 2021–22.

An interactive VR installation utilizing point cloud scans and spatialized audio interviews exploring queer spaces in Berlin.

Heaney, Libby. *Ent-*, 2022.

An immersive 360-degree dome projection utilizing 4-channel spatial sound and generative visual environments authored inside Unreal Engine.