

## **Tárgytematika / Course Description** **Digital Audio and Video Broadcasting**

**GKNM\_TATA024**

**Tárgyfelelős neve /**

**Teacher's name:** dr. Wersényi György

**Félév / Semester:** 2025/26/2

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 2/0/2

**Tárgy féléves óraszám /**

**Teaching hours(sem.):**

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### **OKTATÁS CÉLJA / AIM OF THE COURSE**

Introduction to the basics of digital broadcast systems in theory and applications.

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### **TANTÁRGY TARTALMA / DESCRIPTION**

1. Basics of digital signal processing: conversion, quantization noise, filtering
2. Digital signal manipulation: time correction, jitter, sample frequency conversion, oversampling, dither
3. Error correction and coding, interpolation
4. Source coding in audio: MPEG audio, MUSICAM, ATRAC
5. Digital radio: Digital Radio Mondiale (DRM) and DAB/DAB+
6. Digital image processing and broadcast : DVB systems
7. DVB-S2, DVB-H, S-DMB, T-DMB, WIMAX, IPTV, VoD, NPVR, etc.
8. Broadcast over internet
9. Channel properties: cables, transmitters, set-top-boxes
10. DVB measurements
11. High-definition technology (HD): full-HD, 4K and beyond
12. HD recording formats and players (blu-ray, LED screens, etc.)
13. Future perspectives

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### **SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD**

Written exams. You have to reach 50% to pass.

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**KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

- [1] <http://vip.tilb.sze.hu/~wersenyi/DMJ.pdf>  
[2] Walter Fischer - Digital Video And Audio  
Broadcasting Technology A Practical Engineering Guide  
(4th edition, 2020)
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**AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**