

Electronics Class – Prof. A. Spinelli

Lesson recordings for AY 2023-2024 (access restricted to PoliMI students)

Lesson 0: Class overview (microphone was not working and the audio is terrible)

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=a8c9bbd206f3ac0e504332ffebb9c99f>

Lesson 1: Review of equivalent circuits and feedback amplifiers

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=35df81853df91ec8ff5f766b64fba8>

Lesson 2: Linear applications of OAs (microphone still not working – you may want to check out last year's recording)

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=e5e91413aad67536eafab934b0eb8004>

Lesson 3: Offset voltage and bias currents

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=4d2a051a99cc79ccd73e3d0abb43763a>

Lesson 4: Bias current compensation. G_{loop} and G_{OL} calculation in feedback circuits. Input-output impedances

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=b9ae87ba232442975a529f7c2889f661>

Lesson 5: Frequency response and stability of feedback amplifiers

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=67f760c598646e962d738b82335ed815>

Lesson 6: Frequency compensation of OA circuits

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=3c9486ea5938dd0e6ec67a1d35082055>

Lesson 7: CMRR of the subtractor stage. Instrumentation amplifiers

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=1653496381223e637847191312a4bea4>

Lesson 8: OA parameters and simulation using Simulink. Wheatstone bridge

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=ca185c509dc7d6ca1d71567c69d051c9>

Lesson 9: Effect of lead resistances and temperature. Fourier transform

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=05f49c5c134138d5d1101de8171dd5b1>

Lesson 10: Energy and power signals. Random processes

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=f0516bd613351db351a93595e4500913>

Lesson 11: White noise approximations. Thermal and shot noise

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=a08239b6db282485aae27d6b1da8a18c>

Lesson 12: Flicker noise. Response of LTI systems to signal and noise. Noise in amplifiers

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=bd6b57834416a759e94a7d26def25ced>

Lesson 13: Effect of feedback on noise. White noise filtering and LPF

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=5979dea61d385a63680cadea072da694>

Lesson 14: Time-variant filters and gated integrators. Repetitive pulses and BA

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=37d8154081053c4d31355a94a78ba742>

Lesson 15: Boxcar averager. Discrete-time filters

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=ea62b8daf708c68d29ae54511089a590>

Lesson 16: Discrete-time filters with non-uniform average. Optimum filter

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=984a841f078eb00a7896c983935b88c9>

Lesson 17: Optimum filter for non-white noise. LF noise filtering and HPF

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=99f5bd76d89e4b5827a042536b3f3f79>

Lesson 18: Baseline restorer. Amplitude modulation

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=6323d3b2c249ae4cc0499445605efecb>

Lesson 19: Weighting function and S/N of synchronous detection systems

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=f61fa836e4fa75f0ccca3ff5e50b93f5>

Lesson 20: Lock-in amplifiers

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=d1768925ff75641bf85748a91d0419ca>

Lesson 21a: LIA structure

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=b7c5124e91202634cab824d1935ebc7b>

Lesson 21b: Digital LIAs

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=82fda8bcff78ef466d3cb2f416042017>

Lesson 21c: Auto-zero OAs

<https://politecnicomilano.webex.com/politecnicomilano/ldr.php?RCID=2cbd50ca03303dd9c328bf6914da4e27>