Democritus University of Thrace, Kavala, Greece
School of Science
Department of Informatics

Department of European and International Programmes – Erasmus+
Agios Loukas, 654 04, Kavala University Campus, Greece
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Proposed Course for incoming Erasmus students[1]

Responsible for the course (lecturer) (name, phone number, e-mail address)	Assist. Professor Eleni Vrochidou 0030 2510 462 320 evrochid@cs.duth.gr
Title of the Course	**Digital Signal Processing**
ECTS credits	5
Short contents of the course	1. Discrete-time 1-D signals. 2. Linear time invariant systems. 3. Convolution. 4. Transfer function. 5. Sampling theorem, Nyquist criterion, stability. 6. Discrete Fourier Transform (DFT). 7. Orthogonal transformations (DCT). 8. Fast Algorithms (FFT). 9. Wavelet transform. 10. Z transformation. 11. Design of FIR filters. 12. Design of IIR filters. 13. Analog / Digital and Digital / Analog converters. 14. Random signals, random variables. 15. Signal compression. 16. Applications in the digital processing of voice audio signals, music, telecommunications, biomedicine, etc.
Aim of the course and target audience	• The course aims to acquaint students with the basic principles of digital signal processing at both a theoretical and practical level, highlighting the importance of the subject of digital signal processing in the science of Information Technology and the subjects of Engineering.. • Target audience: Undergraduate students of Informatics/ Computer Science
Teaching Methods duration and Evaluation	Lectures: 26 hours Hands-on exercises: 26 hours Evaluation: 100% Individual AND/OR Group Assignments
Offered Period	Spring semester

Indicative bibliography	1. Scientific journals: • Signal Processing • IEEE Trans. on Signal Processing • Digital Signal Processing 2. Notes from E. Vrochidou

[1] Could be easily used and offered for TS movement to our Erasmus partners