

A decorative graphic on the left side of the slide consists of a vertical grey bar on the far left. To its right are three horizontal bars: an orange bar at the top, a red bar in the middle, and a teal bar at the bottom. All bars have a slight trapezoidal shape, tapering towards the right.

INFORMATICS ENGINEERING

MASTER OF SCIENCE

Department of Electrical and Computer Engineering (ECE)
School of Engineering
Hellenic Mediterranean University (HMU)

APPLIED MATHEMATICS

Prof. Dimitrios Karayannakis (Emeritus)

Prof. Emmanouil Mageiropoulos

Topics in Applied Mathematics

- **Course Description**

Elements of Linear Algebra: Vector Spaces and Linear Maps, Matrices over Real and Complex Numbers (Operations, Determinants, Eigenvalues and Eigenstates, Little Spectral Theorem, Gauss-Jordan Elimination Process. The Discrete Fourier Transform.

Laplace and Fourier Transforms: The L^1 and L^2 Spaces. Definitions of the Laplace and Fourier Transforms as particular cases of Integral Transforms, and properties of them.

Probability Theory: Basic Definitions. The concept of a Continuous Distribution. Some typical examples.

- **Members of staff**

- Prof. Dimitrios Karayannakis (Emeritus)
- Prof. Emmanouil Mageiropoulos

Approach

- Four (4) hours per week (3 hours theory and 1 hour Exercises)
- A midterm project (on Linear Algebra and Laplace Transform) measuring 30% of the final grade and a final exam measuring 70% of the final grade
 - Every week a set of exercises will be given for practice

Specific details

- Lectures' schedule: every Tuesday 9:15-13:00 at room 205
Learning materials (in Greek)
 - Δημήτρη Καραγιαννάκη «ΕΙΣΑΓΩΓΗ ΣΤΗ ΓΡΑΜΜΙΚΗ ΑΛΓΕΒΡΑ: Θεωρία και Εφαρμογές», Εκδόσεις Ζήτη, 2012, ISBN: 978-960-456-340-1
 - Δημήτρη Καραγιαννάκη «ΑΝΑΛΥΣΗ ΣΗΜΑΤΟΣ: Θεωρία και Εφαρμογές», Β' Αναθεωρημένη Έκδοση, Εκδόσεις Δίσιγμα, ISBN: 978-960-9495-80-6

Applicant profile

- Pre-requisites
 - Basic Calculus and Basic Linear Algebra
- Expected weekly workload
 - Normally no more than 5 hours in average