

MAIT - MASTERS IN THE MATHEMATICS OF ADVANCED INDUSTRIAL TECH

MAIT623 Modern Mathematical Methods of Signal and Image Processing I (3 Credits)

Introduction to current signal/image processing techniques, including wavelets and frames, in the context of applied and numerical harmonic analysis. Topics include time-frequency and time-scale representations, sub-band filterbanks, and applications to compression and denoising.

Prerequisite: Must have knowledge of advanced calculus and applications.

MAIT626 Statistical Pattern Recognition and Classification (3 Credits)

Mathematical and statistical tools for decision making based on categorization of patterns present in data. Topics include regression, feature extraction, dimensionality reduction, parametric and non-parametric approaches to decision, estimation, and classification problems.

MAIT679 Special Topics in Mathematics of Advanced Industrial Technology (3 Credits)

Special topics courses are intended to expose students to the latest developments in mathematical applications. As such, the content will vary depending on the instructor and the current state-of-the-art. 679 will appear with a letter appended to distinguish different topics. New 679 courses will be added as areas of interest arise.

MAIT699 Independent Masters Project (1-3 Credits)

This course allows students to apply advanced mathematical methods to practical, real-world problems. Projects are supervised individually by faculty members from the MAIT Program. The project's nature is flexible and determined jointly by the student and supervisor. A detailed final report must be prepared by the student and approved by the supervisor.

Restriction: Permission of instructor.

Repeatable to: 12 credits if content differs.