

Department: Mathematics and Computer Sciences

Division: Applied Mathematics

Level and Major: Graduate

Course Title: Special Topics (Numerical Methods for Data Science)

Number of Credits: 3

Prerequisite: Group Permission

Lecturer:

Course Description:

Course Goals and Objectives:

Course Topics:

- Basic definitions and concepts
- Linear Systems and Least Squares
- Orthogonality, QR Decomposition
- Singular Value Decomposition
- Reduced-Rank Least Squares Models
- Tensors
- Clustering and Nonnegative Matrix Factorization
- Classification of Handwritten Digits
- Page Ranking for a Web Search Engine
- Automatic Key Word and Key Sentence Extraction
- Face Recognition Using Tensor SVD

Reading Resources:

Evaluation: