Summary
Study of advanced image processing; mathematical imaging. Development of image-processing software and prototyping in JAVA; application to real-world examples in industrial vision and biomedical imaging.

Content
• Deconvolution. Inverse and Wiener filtering. Matrix formulations. Iterative techniques (ART).

Learning Prerequisites
Required courses
Image Processing I

Recommended courses
Signals and Systems I & II, linear algebra, analysis

Important concepts to start the course
Basic image processing and related analytical tools (Fourier transform, z-transform, etc.)
Learning Outcomes
By the end of the course, the student must be able to:
- Construct interpolation models and continuous-discrete representations
- Analyze image transforms
- Design image-reconstruction algorithms
- Formalize multiresolution representations using wavelets
- Design deconvolution algorithms
- Perform image analysis and feature extraction
- Design image-processing software (plugins)
- Synthesize steerable filters

Transversal skills
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Manage priorities.
- Access and evaluate appropriate sources of information.
- Use both general and domain specific IT resources and tools