

# DIGITAL IMAGE ANALYSIS FOR SCIENTIFIC APPLICATIONS

## 5 CREDITS

### LEARNING OUTCOMES

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To pass, the student should be able to

- Explain fundamental notions on computerized image analysis, such as digitizing, image enhancement, segmentation and classification of features.
- Describe fundamental notions on research ethics and methodology in image analysis.
- Use software for solving image analysis problems.
- Analyze and outline the steps necessary to solve a realistic image analysis problem in the student's own research area.
- Understand when image analysis can be a solution to a specific problem and when it will probably fail.

### CONTENT

Digitization, Filtering, Segmentation, Feature extraction, Shape description, Classification, Color, Compression, Research ethics in image analysis, Research methodology in image analysis.

### INSTRUCTIONS

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Lectures, laboratory work, projects.

### ASSESSMENT

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Approved laboratory work. Oral exam.