

Course: Image Processing and Analysis (II)

MAC9023

Series No. 2718

Course objectives (課程目標)

It is expected to set up a one-year special course on image processing and analysis for students in the Department of Mathematics. We plan to propose and understand the topics of image processing from the perspective of building models, and provide a cross-domain course to expose students to cross-domain application knowledge. There are many important problems and skills in the field of image processing, such as denoising, deblurring, image enhancement, and image cutting. At the beginning of the course, students will learn the basic knowledges of image processing and the mathematical theory behind them. After completing the basic imaging skills, various image processing problems and topics will be introduced. Students will report in groups the related algorithms and computer programs for each selected topic. Through this learning mode, students can also use their understanding of image processing, and try to apply mathematical skills to solve related problems of image processes.

Meanwhile, the objectives of this course are the following:

- (1) Promote the professional skills in mathematics
- (2) Develop problem-solving skills with applied mathematics in Image Processes and Analysis.
- (3) Raise the level of mathematical abstract thinking
- (4) Interpreting the connection between mathematics and other disciplines from a high point of view