Course title:
Computer Vision

Instructor:
Stanislav Kovačič

Goal:
To master fundamental concepts of visual sensory perception in intelligent control and robotics.

Contents:
- Vision in man and machine. Computer vision research trends and application domains.
- Image formation, camera modeling and calibration.
- Stereo vision, stereo matching, stereo modeling and calibration, hand-eye calibration.
- Propagation of light, structured lighting. Color, color spaces.
- Image analysis basics: edges, corners and lines, regions, blobs, textures and shapes.
- Visual tracking, optical flow and motion field.
- Case studies in automation and robotics.

Literature:
D. Forsyth, J. Ponce, Computer vision, a modern approach, 2nd Ed., Pearson 2012.
E. Trucco, A. Verri, Introductory techniques for 3-D computer vision, Prentice Hall, 1998.
M. Sonka, V. Hlavac, R. Boyle, Image processing, analysis and machine vision, 3rd Ed., Chapman and Hall Computing series, 2007.