

Course Code: CS282

Course Name: Computer Vision

Instructor: Pros Naval (pcnaval@ieee.org)

Schedule: Tuesdays 3 to 6 pm (Synchronous Online Lectures)

Zoom Link: <https://up-edu.zoom.us/j/89350224341> Meeting ID: 893 5022 4341 Passcode: 27871187

Course Description:

Computer Vision is concerned with the automated construction of three-dimensional models and recognition of objects from image data with the goal of reasoning from the reconstructed 3D structure and the semantic information derived therefrom. In this course, emphasis will be given to implementation of important computer vision algorithms, programming exercises and a mini-project.

Credit: 3 units

Prerequisite: Knowledge of Deep Learning or Consent of Instructor

Topics:

- 1 Introduction
- 2 Image Enhancement in the Spatial and Frequency Domains
- 3 Projective Geometry, Camera Modeling and Calibration
Programming Assignment 1
- 4 Feature Detection and Matching
- 5 Region Segmentation
Programming Assignment 2
- 6 Structure from Motion
- 7 Image Stitching
Programming Assignment 3
- 8 Stereo Correspondence
- 9 3D Reconstruction
Programming Assignment 4
- 10 Recognition
- 11 Student Reports on Current Developments in CV
Student Mini-Project Presentations and Paper Submission

Text: Szeliski, Computer Vision: Algorithms and Applications, (2nd ed)Springer, 2022.

Course Requirements:

Programming Assignments (4)	40 %
Mini-Project	40 %
Reports	15 %
Class Participation/Attendance	5%

Class Policies:

1. Course materials (video, slides, etc.) are copyrighted and should not be shared without permission of instructor.
2. A student who intends to drop the course must do so **officially** otherwise s/he will get a failing grade at the end of the semester.
3. "At Most Once" Submission for Programming Assignments.
4. Submission email: submit2pcnaval@gmail.com