

## 3D computer vision

Number of ECTS credits: 3

Coefficient: 3

### Description:

- Modeling of the perspective projection
- 1 view geometry: estimation of pose
- 2 view geometry: triangulation, epipolar constraint, mapping, homography between planes, image mosaics
- 3 view geometry: trifocal constraint
- N view geometry: Camera Calibration, Movement Reconstruction

### Pedagogical objectives:

Basics of projective geometry of points and straight lines

Camera calibration, attitude estimation Stereoscopy, epipolar geometry, triangulation Three-dimensional reconstruction

### Bibliography:

Multiview Geometry. R. Hartley & A. Zissermann. Cambridge University Press, March 2004

### Prerequisite:

Linear algebra, optimisation, Vision2D

Lectures Hours: 10.5

Tutorials Hours: 6

Labs Hours: 12

Knowledge monitoring modalities: 100% continuous assesement

Assesement: Reports of labs, exam

**Leader: Nicolas ANDREFF**

**Participants:**