RoboCup
Humanoid Robot NAO

Intel Atom 1.6 GHz CPU
1 G RAM
8 G Flash Memory

2 Cameras
4 microphones
4 Sonars
IMU
8 FSR
2 Bumpers
Wifi

25 DoF
2 loudspeakers
Multiples LEDs
SimSpark

Programming Humanoid Robot in Python
Python

NumPy
N-dimensional array

SciPy
Scientific computing

Matplotlib
Comprehensive plotting

IPython
Interactive console

Scikit-learn
Machine Learning
Course Plan

**Requirement**  linear algebra, programming

**Target**  programming humanoid robots to play soccer (in simulation)

**Content**  joint control, keyframes, transform, robot model, pose recognition, forward kinematics, and inverse kinematics, dynamics, biped locomotion, localization, soccer robot

**Schedule**  $6 \times 90$ minutes

**Exercises**  programming in Python

**Project**  program a robot soccer team in simulation
More Information

- dainamite.de
- simspark.sf.net
- robocup.org
- tzi.de/spl
- aldebaran.com
- python.org
- scipy.org