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| **day** | **place** | **Time** | **duration** | **activity** |
| 25-jun | Classroom 7 | 9:30-10:30 | 1h | Introduction and objectives of the course. Working groups setup |
|  | Classroom 8 | 10:30-11:30 | 1h | Robotics introduction (areas of study: humanoid robots, computer vision, teleoperated robots….) |
|  | Classroom 9 | 11:30-11:45 | 0.25h | coffee break |
|  | Classroom 10 | 11:45-12:30 | 0.75h | Introduction mobile robotics (example robots, applications, types) |
|  | Classroom 11 | 12:30-13:30 | 1h | Elements of a robot  (actuators, controllers, sensors) |
| 26-jun | Classroom | 9:30-11:30 | 2h |  |
|  |  | 11:30-11:45 | 0.25h |  |
|  | Laboratory | 11:45-13:30 | 1.75h |  |
| 27-jun | Computer B | 9:30-11:30 | 2h | introduction to python I |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 12:00-13:30 | 1.75h | introduction to python II |
| 28-jun | Computer B | 9:30-10:30 | 1h | ROS introduction (philosophy, common tools, common robot platforms) |
|  | Computer B | 10:30-11:30 | 1h | ROS middleware (master, topic, services) |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 11:45-13:30 | 1.75h | ROS commands console |
| 29-jun | Computer B | 9:30-10:00 | 0.5h | package structure |
|  | Computer B | 10:00-11:30 | 1.5h | ROS subscribers and publishers in Python |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 11:30-11:45 | 1.75h | ROS service/client/actios/bags in Python |
| 02-jul | Computer B | 9:30-10:30 | 1h | URDF files and their integration in RVIZ and GAZEBO |
|  | Computer B | 10:30-11:30 | 1h | Alboorg University Robotics Lab |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 12:00-13:30 | 1h | RVIZ |
|  | Computer B | 12:00-13:30 | 0.75h | Connecting the kinect to ROS |
| 03-jul | Computer B | 9:30-10:00 | 2h | teleoperation module (use the keyboard of raspberry PI to control the robot) |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 11:45-13:30 | 1.75h | robot test |
| 04-jul | Computer B | 9:30-10:30 | 0.5h | ROS navigation stack |
|  | Computer B | 10:30-11:30 | 1.5h | gmapping (odometric model, IMU+encoder, kalman filter) |
|  | Computer B | 11:30-11:45 | 0.25h | coffee break |
|  | Computer B | 12:00-13:30 | 1.75h | practical exercise with robot [using kinnect] |
| 05-jul | Computer B | 9:30-11:30 | 1h | Autonomous Montecarlo Localization (AMCL) |
|  | Computer B |  | 1h | ROS move-base node (navigation algorthims) |
|  |  | 11:30-11:45 | 0.25h |  |
|  | HALL 2nd floor | 12:00-13:30 | 1.75h | robot test |
| 06-jul | HALL 2nd floor | 9:30-11:30 | 2h | robot test |
|  | HALL 2nd floor | 11:30-11:45 | 0.25h |  |
|  | HALL 2nd floor | 12:00-13:30 | 1.75h | robot show |