



ADVANCED ROBOTICS WITH ROS 2 CURRICULUM

1. Foundations:

1. Linux for Robotics
2. Python 3 for Robotics
3. C++ for Robotics
4. Advanced Modern C++ for Robotics

2. Basic ROS 2:

1. ROS 2 Basics (Python or C++)

3. Intermediate ROS 2:

1. ROS 2 Navigation
2. Behaviour Trees for ROS 2
3. Distributing ROS Apps with Snaps
4. Intermediate ROS 2
5. Advanced ROS 2 Navigation
6. ROS 2 Security
7. URDF for Robot Modelling in ROS 2
8. ROS 2 Control Framework
9. TF ROS 2

4. Robotics Theory:

1. Robot Control
2. Robot Dynamics and Control
3. Kinematics of Mobile Robots
4. Kalman Filters
5. Maths for Robotics
6. Path Planning
7. Arm Kinematics

5. Navigation:

1. ROS Navigation
2. Fuse Sensor Data to Improve Localisation
3. TEB Local Planner
4. OpenCV for Robotics
5. Robot Perception

6. Manipulation

7. Debugging:

1. Unit Testing
2. RViz Advanced Markers
3. Debug Cases
4. GTest Framework

8. Web Development for Robotics:

1. Developing Web Interfaces

9. Simulators:

1. MuJoCo
2. Gazebo

